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APPL NO.	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY.DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/673,866	11/22/2005	3617	543		7	7	7

OIPE
FEB 19 2008
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EDWARD LINSLEY
137 DEER CREEK ROAD
WETUMPKA, AL 36092

CONFIRMATION NO. 4632

FILING RECEIPT

OC000000017695314

Date Mailed: 12/21/2005

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).**

Applicant(s)

Edward L. Linsley, Wetumpka, AL;

Power of Attorney: None

Domestic Priority data as claimed by applicant

Foreign Applications

If Required, Foreign Filing License Granted: 12/19/2005

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is US10/673,866

Projected Publication Date: 05/24/2007

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

Twister wings sailboat

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CONFIRMATION NO. 4632

FILING RECEIPT

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CONFIRMATION NO. 4632

UPDATED FILING RECEIPT

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Power of Attorney: None

Domestic Priority data as claimed by applicant

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**** SMALL ENTITY ****

Title

Twister wings sailboat

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Application No. 10/673,866
Twister Wings Sailboat
334 567-9869
Feb. 15, 2008

The enclosure answers Office Action letter dated 12/17/2007.

A timely reply to this document is requested within three months after its mailing date.

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Notice of References Cited

Application/Control No.	Applicant(s)/Patent Under Reexamination	
10/673,866	LINSLEY, EDWARD L.	
Examiner	Art Unit	Page 1 of 1
Ed Swinehart	3617	

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-543,210 A	07-1895	Jessup	114/126
*	B	US-D241,130 S	08-1976	Jackson	D12/304
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N	DE 3718459 A1	12-1988	Germany	NOWAK, PETER	B63B 01/12
	O	GB 2220170 A	01-1990	United Kingdom	WEBSTER, ROBERT JOHN	B63B 01/26
	P	FR 2696150 A3	04-1994	France	DEUTSCH, REINHARD	B63B 01/32
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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NOTICE OF REFERENCES CITED

US-543,210 A

The square-hulled wooden sailing vessels of the 1800's, with their canvas sails, were very inefficient when trying to beat upwind. It was a contest in trying to keep a boat reasonably upright while powering up the sails to sail at some favorable angle into the wind.

The solution proposed in the patent was to use lateral floatation devices along with vertical leeboards. Hollow, airtight, buoyant shells with vertical boards in the water were intended to resist capsizing and prevent leeward movement, primarily to improve "sailing close to the wind". Modern boats use daggerboards and centerboards on small hulls, and weighted keels on large sailing craft. The Twister Wings Sailboat takes it to the next step by increasing roll stability with a leeward wing adding hydrodynamic lift outboard while the crew weighs down the outer edge of the windward wing and leeward drift is controlled by a daggerboard. Therefore, there is no similarity to the Twister Wings Sailboat.

US-D241,130 S

This is a Design Patent and as the Claim states, "The ornamental design for a sailboat hull substantially as shown." I am uncertain how it relates to Utility Patents, nevertheless, I will consider that it can adept a sail rig.

The hull is long and slender, characteristic of displacement, rowing shells which, like canoes, have little stability in roll. Therefore, the wings are apparently designed to provide the stability to counteract the rolling force of sails. However, they are concave on their surface which means that the bottom of the curve projects horizontally from the lower portion of the hull. Therefore, they will provide some static roll stability, and a considerably higher amount if they are boxed in across the top and the outer ends in order to provide buoyancy.

Now consider what happens if a sail is provided to create thrust to produce a forward motion, Fluid mechanics applies whether the wings are in air or in water. With the much higher density of water compared to air, forces on a submerged abject will be many times greater than that in air. This is characterized by a small daggerboard compensating for leeward pressure of a very large sail area.

On an aircraft, lift is generated by air flowing up and over a wing with its upper surface crowned. The lift occurs because the air has to accelerate over the curve to keep the mass-flow constant across a wing. This reduces the pressure in the flow along the surface, creating a suction on the wing, generating the lift.

The curve on the wings of the Design Patent will produce the same effect in the water, except at a much lower boat speed due to the high density of the water. And as the water flows under the

wings, the lift under the curve is down. Therefore, it will pull the wing down. Then as the sail force heels the boat and the opposite wing clears the water, the immersed wing will just roll over the boat, assisted by the side force of the sail. What a great design for a sailboat. Actually, I cannot fault Mr. Jackson, the author, since he does have an artistic design and he would not be expected to be proficient in fluid mechanics. Finally, it has no relationship to the Twister Wings Sailboat.

DE 3718459 A1

As the title says, "Outriggers for Sailing Craft". Outriggers are as ancient as the Polynesians of 2000 years earlier who used them to stabilize their sailing canoes for traveling between islands in the south Pacific. There is no telling how many variations have been used, even up to modern times. They hold floatation devices outboard of the hull to provide roll stability. Apparently every little variation can be patented. The Twister Wings Sailboat does not have outriggers, it has surfboard type wings attached directly to the hull, used to be purposely rolled to the water in order to transfer lift from the hull, at a greater outboard position.

GB 2220170 A

This is another outrigger boat which has a surfboard hull with multi-hull functions added. Apparently, this is an innovative design in some respects. It departs from a standard sailboard design in that the mast is self-supported by a forestay at the front of the hull and to its shrouds which attach outboard on the seat/floats (10). This means that the three-way connection up the mast creates a fixed position relative to the hull. This still allows the mast and sail to be rotated about the mast step and the three way connection, by use of the hand-rail (3) on the mast. However, this hand-rail rotation may be prevented by the use of the anchor lines (4), which would prevent the mast from any rotation. It is not mentioned if the anchor lines (4) are optional. I have not sailed a sailboard but it is not apparent to me how any sailboard could sail with its sail locked in a centerline position.

The first sailing option, without hydrofoils, is not viable on a reach when the wind is up, unless a helmsman is very active on a trapeze. Being seated in this type of sailing is difficult to comprehend. Without the anchor lines (4) and without the trapeze, the boat could probably be sailed somewhat like a normal sailboard, using the seats/floats (10) for moving in and out to augment the sail rotation and lateral weight distribution.

Of most interest, is the use of the hydrofoils (6) attached to the seats/floats (10). Sized properly, these alone could have a powerful roll stabilizing effect, whatever the mast rotation or use of a trapeze. Visualize a front or rear view of the hull and seats/floats with large hydrofoils canted inward and just barely penetrating the water surface with the weight of the crew aboard. As soon as the boat heeled at any speed, the raised seat/float would lift its hydrofoil out of the water and it would be inactive while the leeward hydrofoil would penetrate the water to produce a powerful lifting force for keeping the boat level. This would not be the delayed reaction of a human sailor but would be an immediate reaction, proportional to the depth caused by the roll angle. A large hydrofoil could negate the requirement for a trapeze. This is what this whole patent should be

about. I can visualize a different slant on the hydrofoil but it is not my patent so it's time to stop.

Fortunately for me, this function is far different than using surfboard wings attached to a monohull, surfing the flow and providing speed and comfortable seating for a number of sailors. The Twister Wings Sailboat is still unique.

FR 2696150 A3

This is a sailboard with triangular, gull-shaped wings attached from nose to tail on a squared-off central hull. The wings are raised at an angle above the plane of the hull and each wing can have ailerons or elevators at their tips along with floats. It is stated that the wings with ailerons and floats may be kept out of the water when the hull is planning. The wings support ailerons at the wingtips which form a "V" to assist in directional stability (p 4, Par. 10) as well as floaters 15 (p 2, Par, 35) for surface stabilization as associated with trimarans.

I am a pilot with 1300 hours of flight time in single engine aircraft in the Army Air Corps of WW 11. In aircraft terminology, ailerons are wing flaps which are synchronized on each wing to roll an aircraft, and elevators are horizontal tail planes which are used to pitch the nose up and down. The ones in the boat, above, apparently must be passive.

Fig. 4 shows a planning hull but it is so narrow that it is probable that it, alone, could induce planning only at high speeds. Just saying that it can induce planning continuously at lower speeds and winds than heavier craft, is a phrase that could be applied to any sailboat at any speed.

Finally, Fig 1 shows the inner curve of the delta wing. Fig 4 shows the floats at the wing tips. Therefore, this wing is somewhat like an outrigger with a solid wing filling the voids. If it were to ride with a wing tip continuously on the water, its friction drag and turbulence could overcome any performance potential even though it would be stable in high winds. It was not designed with an optimum planning shape for continuous sailing on a wing or it would not require the floats and ailerons. It does not compare to the Twister Wings Sailboat.

TWISTER WINGS SAILBOAT

All Twister Wings Sailboats are designed for continuous sailing on a leeward wing whenever the wind is adequate for heeling the boat. A wing should also be of a size that when it leans hard over, it will transfer over one-half of the gross weight of the boat and crew to itself, a lifting surface more efficient than that of the hull, and at an outboard location. Its mode of operation is totally unique. Even if it were shaped as a delta wing, if it could produce the lift performance of a surfboard, it would still provide a breakthrough in sailing. However, the preferred design of Figs. 5 and 6 in the Patent Application is superior in performance, ease of operation, recovery from a knockdown, and wing folding. Furthermore, a prototype has been tested fourteen times in winds up to 30 mph. It has proven that the concept is unique.

Copy of original Patent Application #10673866, dated 09/29/2003, for Twister Wings Sailboat, Edward Linsley; Patent Application Inventory, Patent Application Transmittal, Fee Transmittal for FY 2003 (1st page only), Declaration for Utility Patent Application, Information Disclosure Statement, Petition to make special, 7 pages; Specification, Claims, Abstract, Writing format of Specification, Specification Index, 35 pages; Figures, 6 pages; Prior Art Patent Search, 42 pages; Prior Manufactured Art; 12 pages; Prototype elopment not included; Certificates of Correction, 11 pages; Upgraded ns, 6 pages; Total 119 pages.

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